

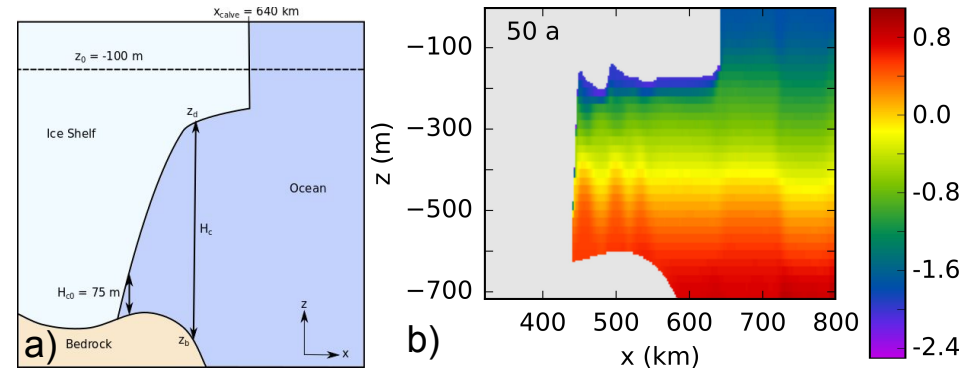
# Experimental design for three interrelated Marine Ice-Sheet and Ocean Model Intercomparison Projects

## Objective

The Marine Ice Sheet-Ocean Model Intercomparison Project (MISOMIP) aims to support community efforts to study sea-level rise using coupled ice sheet-ocean models. Here, we designed idealized experiments to aid in coupled model development and model evaluation.

## Approach

- Three sets of idealized experiments, one each for ice sheet, ocean and coupled ice sheet-ocean models
- Common domain and topography, allowing comparison of standalone and coupled results
- Three model intercomparison projects (MIPs) already underway



a) Experimental setup showing a transect of an ice shelf and ocean cavity. b) DOE POPSICLES model results showing ocean temperature (color) and ice topography (gray).

## Impact

By comparing results from a variety of models, we expect both to gain a better understanding of the models and to improve model parameterizations and numerical methods. Indeed, the results of the first MIP were submitted in October 2016 and preliminary analysis has already motivated efforts toward new melt parameterizations.

**Reference:** Asay-Davis, X. S. et al.: Experimental design for three interrelated marine ice sheet and ocean model intercomparison projects: MISOMIP v. 3 (MISOMIP +), ISOMIP v. 2 (ISOMIP +) and MISOMIP v. 1 (MISOMIP1), Geosci. Model Dev., 9, 2471-2497, doi:10.5194/gmd-9-2471-2016, 2016.